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Strategic Groups: A Useful Linkage Between Industry Structure and Strategic Management?

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ABSTRACT

This paper discusses the concept of strategic groups focusing upon the importance of intra-industry strategic groupings in understanding differences across firms within an industry. The problems involved in identifying strategic groups within industries are examined through a comprehensive review of recent studies. It is demonstrated that much of the research has used surrogates for elements of a firm's strategic direction, e.g., finance, marketing, R&D strategy, etc., to suggest bases by which creative and sustainable groups are formed.

The authors argue that certain theoretical concepts such as mobility barriers, isolating mechanisms and controllable variables provide much firmer bases for identifying strategic groups within industries. Thus, taxonomies for structuring processes of strategic group formulation can be developed. Implications of the strategic group concept for such strategic issues as the structure-performance linkage, firm mobility, patterns of rivalry and firm growth are then examined. The paper concludes by indicating fruitful directions for strategic group research in the context of the strategic management field.

FIRMS, INDUSTRIES, AND MARKETS

There has been much controversy and discussion in the literature of industrial organization about whether the firm or industry or some other intra-industry group stratification is the appropriate unit for analysis. More recent developments in oligopoly theory have done much to resurrect interest in analysis at the firm level by concentrating on interactions in markets where one firm's action affect its rivals. Such theoretical developments have filled the 'gaping hole' left by economists' traditional focus on the two polar cases of pure competition and pure monopoly. However, the indeterminacy of the oligopolistic game within the traditional constrained optimization static equilibrium framework has made it difficult to drive the analysis towards any useful conclusion.

Most firms are multiproduct, sell in more than one market, and have grown by diversification. The industry as conventionally understood produces a range of different products all of which are not close substitutes, and uses a variety of technical production processes. It therefore becomes unclear where the boundaries of the industry should be drawn. However, two criteria are commonly used to define these boundaries: markets and technologies. The market criterion is used to include within a specific industry those products which are sufficiently similar as to be close substitutes in the eye of the buyer, the similarity being the familiar cross-elasticity of demand. The technological criterion (e.g., Andrews (1951)) focuses upon the classification of industries according to their similarity of processes. Breaks in the chain of cross elasticities of supply (rather than demand) are examined

in order to identify the boundaries of the industry. Unfortunately, neither approach is able to specify at what point in the spectrum of demand or supply cross-elasticities the industry boundary line should be drawn. This imprecision in industry definition is probably unavoidable. For example, Chamberlin (1951) advanced the idea that an industry was not a definite economic entity but an analytical tool which could be used with varying degrees of generality.

Many economists have concluded that the concepts of market and industry should be viewed as complementary and the emphasis employed should reflect the problems under consideration. According to Joan Robinson (1956):

"Questions relating to competition, monopoly and oligopoly must be considered in terms of markets, whilst questions concerning labour, profits, technical progress, localisation and so forth have to be considered in terms of industries."

In an economic environment characterized by widespread product differentiation and technological change, it is not at all clear where one industry ends and another begins. Many large firms are capable of producing an extremely wide range of products and can potentially enter and compete in a number of different industries. On purely technological grounds, products can be made which compete for the same customers but which embody different technologies and which are produced by different processes. Moreover when undertaking an empirical investigation, it may be difficult to decide to which industries some firms should be assigned. In practice these insoluble problems are resolved on an individual basis, with the definitions employed being adapted to each specific situation.

The purpose of this paper is to re-examine these issues. In particular, a concept of a finer grouping than the industry has recently become popular (Porter (1980)). This appears to be a supply side concept in that it seeks to identify groupings or structures within industries, but it is in fact based on the observed similarity of behavior of firms. These groups are called strategic groups because of the criteria by which they are observed. They are essentially long term in nature and costly to reverse and are relatively tightly drawn structures within the more loosely drawn industry structure of conventional theory. If such groups exist they will clearly have implications for the patterns of competition within industries, will contribute to our understanding of oligopolistic interdependence, and may enrich the structure-conduct-performance paradigm of industrial organization theory. For the business policy researcher and for the business strategist, strategic groups offer a distinctive slant on the identification of relative competitive position and suggest a systematic and comprehensive way of conducting a strengths and weaknesses analysis in terms of the framework of relative competitive advantage.

STRATEGIC GROUPS - THE EARLY DEFINITIONS AND MORE RECENT STUDIES

The main studies in the area of strategic groups are summarized in Table 1 and discussed in the following paragraphs.

Insert Table 1 about here

The term "strategic groups" was coined by Michael S. Hunt in his doctoral dissertation (1972) to contribute to his explanation of the performance of the "white goods" industry in the 1960's. Hunt observed

that there were three sources of asymmetry between firms within the "white goods" industry: the extent of vertical integration, degree of product diversification and differences in product differentiation. This asymmetry resulted in four strategic groups: (i) full-line national manufacturers' brand producers, (ii) part-line national manufacturers' brand producers, (iii) private brand producers, and (iv) national retailers. His rationale for this grouping was that it "minimized economic asymmetry within each group," Hunt (1972: 57). He argued that the problems facing the potential entrant differed depending on which group he intended to enter, and Hunt therefore attempted to isolate "barriers to entry to each strategic group" in a descriptive vein.

Howard H. Newman (1973) in his doctoral dissertation, applied the same principles in a statistical examination of 34 four digit "producer-goods" industries all of which were related to "chemical processes." Michael E. Porter (1973) also analyzed statistically a sample of 38 three digit "consumer-goods" industries in his doctoral dissertation.

While Hunt focussed on strategic differences among competitors in their principal markets and delineated groups according to symmetry (homogeneity) of operations within the same basic businesses, Newman asserted that strategic groups can also be "defined and identified by the relationship between the industry at hand and the activities carried out by its member firms outside that industry" (1978: 418). It follows at once, he said, that those firms sharing the same basic business can be placed in the same strategic group while firms operating in the industry but having their principal business in a different

industry form a different group. To a substantial degree therefore, strategic groups "turn out to be defined by their differing degrees of vertical integration with the market in question" (1978: 419). His analysis showed "that differing base industries and patterns of vertical integration sufficed to stratify rival sellers into subgroups, "but," as he himself pointed out, it left "open the question of what other operational factors may prove sufficient both theoretically and empirically for distinguishing them" (1978: 425).

Porter (1973) proceeded by "using the relative size of a firm in its industry as a proxy for its strategic group membership," dividing firms in each industry into two categories defined as industry leaders and followers. He argued that "the leader/follower dichotomy may be particularly apt for dichotomizing strategic groups in a sample restricted to consumer goods industries," because "while the configuration of strategic groups will vary from industry to industry, the leader group should encompass those strategic groups in the industry which are characterized by strategies potentially achieving economies of scale in production technology, vertical integration, captive distribution, in-house repair and service facilities, national advertising, and so on if these economies exist in the industry. The leader group should also encompass strategic groups with broad product lines and large sales forces. The follower group, on the other hand, is likely to encompass strategic groups composed of firms following specialist or narrow-line strategies, regional strategies, non-integrated strategies and so on. Thus the leader/follower distinction captures some of the variance among strategic groups," Porter (1979: 220-221).

Kenneth J. Hatten in his doctoral dissertation (1974) on the U.S. Brewing Industry 1952-1971, paid greater attention to the methodology for establishing intra-group homogeneity and variance between groups. He argued that the earlier researchers (Hunt, Newman, Porter) had focussed on groups, not on firms, and in spite of considerable attention to the assumption of homogeneity within an industry across firms, they had not tested for homogeneity on a firm by firm basis. Hatten therefore began with case studies of firms in the brewing industry from which he concluded that brewers competed by allocating resources to two principal functional areas: manufacturing and marketing. He therefore specified an eight variable model, relating return on equity (performance) to three manufacturing variables (number, age, and capital intensity of plants), three marketing variables (number of brands, price, and receivables/sales) and two structural variables (8-firm concentration ratio, and firm size).

His first step in the statistical analysis was to develop disparate internally homogeneous groups. He argued that "The process must begin with an untested assumption: since the current state of art in statistical theory cannot cope with simultaneous non-homogeneity across firms (sections) and across time, a decision must be made to assume homogeneity over time or across sections. Since our interest was the firm and because it seemed more likely that the brewing industry would be homogeneous across time, the research began with that assumption," (Hatten and Schendel (1977: 101)). He believed that it was difficult to decide which firms to group together (because one firm may be homogeneous with one or more other firms), although it could be done in

accord with a priori theory using criteria such as size (as Porter did) or types of market served. He resolved this problem by using a cluster programme to determine the distance between firms. Then he conducted a regression analysis which demonstrated that important differences existed between the pooled estimates (the industry model) and the estimates made on the clusters (the disparate but internally homogeneous groups). The next step was to relax the assumption about industry homogeneity across time. The main problem then was to select the appropriate breakpoint (year); for this a content analysis of the industry served as a guide.

Hatten and Schendel's (1977) conclusion was that "attention to homogeneity" revealed information that would otherwise be obfuscated: they thus believed they had discovered a useful methodology for isolating strategic groups. They also argued that the identification of strategic groups could help management evaluate proposed strategies and check the usefulness of conventional wisdom in specific competitive situations, Hatten et al (1978: 592). They stressed that:

"The notion of strategy leads to the expectation that, within a given industry or set of markets, different competitors with different resources should choose different means to attain their ends. Among other indications, this suggests that industry level models and indiscriminate pooling of data can produce results that are easily misled if used at the firm level. It also suggests that in the real world there really are different ways of "skinning a cat," the firm too quick to copy a successful competitor, one which tries to emulate its competitors without careful thought, may overlook its own capabilities and work against its strengths" (1978: 608).

One of the limitations of the Hatten study was that it was confined to firms competing in the same environment, namely, the brewing industry.

This industry was selected to control the product-market variable (diversification) at a low and non-significant level. With all chosen firms being undiversified, single-business units, the study was perforce reduced to one of "business strategy" (strategy variables concerned with operations) and not "corporate strategy" encompassing product-market and geographical diversification and horizontal and vertical integration.

Caves and Pugel (1980) follow Porter (1973, 1979) in using firm size as an indicator of strategic group membership. They found that small firms were more profitable in some of the industries which they studied.

Oster (1982) used one element of a firm's conduct, its product strategy, as the basis for group differentiation. She argued that there may be persistent differences across firms in terms of advertising strategies (as measured by the advertising to sales ratio). She assigned firms to strategic groups in an industry in a given year (1978: 378) based upon whether its advertising to sales ratio was (1) below or above the industry average for that year, (2) in the bottom versus the top of the industry distribution for that year. She also examined the extent of stability in these differences over time in order to understand processes of group change. She concluded that while the identification of strategic groups is a judgmental process it does enrich our understanding of the workings of some consumer goods industries. For example, she found that it is the long-term durability of a firm's advertising investment strategy which maintains the group structure. This is consistent with the notion of advertising as a strong entry deterrent and barrier to mobility within consumer goods industries.

Ryans and Wittink (1982) use finance theory and the capital asset pricing model as their framework for group identification. They argue that if two or more firms are in the same strategic group, then their stock prices should tend to move together. They qualify this argument by stressing that it is more likely to hold for industries in which the participants are essentially one-industry firms and over a sufficiently long-time period so that particular internal or external industry differences do not have a disproportionate effect on security prices. They studied the airline industry and showed that the trunk airlines grouped together. Regional or intra-state airlines had no consistent overall clustering pattern but tended to group most frequently with another similar airline.

Baird and Sudharsan (1983) used a three-mode factor analysis to cluster participants in the office equipment/electronic computing industry according to certain financial accounting variables such as leverage and return on assets. They identify several different and rather stable groups in this industry which appear to differ with respect to their financial policies and strategies.

Primeaux (1983) hypothesized that investment behavior (measured by net capital expenditures) may be an important variable by which the life cycle stage of an industry may first be identified. He links the life cycle and strategic group concepts and shows that strategic groups, using a relative size measure, can be assessed for particular industries as a function of the industry life cycle stage. Primeaux compares his strategic group method with Porter's (1973, 1979) approach in relation to the textile and petroleum industries. While Primeaux's

results appear to be superior for the petroleum industry, Porter's results are better for the textile industry. Primeaux concludes, inter alia, that current research has not determined the most appropriate approach for determining strategic group membership and that future research must concentrate upon finding reliable and consistent approaches for strategic group identification.

Howell and Frazier (1983) use Abell's (1980) criteria for business definition to form strategic groups in the hospital supply industry. Using the degree of scope and differentiation on the customer groups and needs dimensions, they conceptualize strategic groups in terms of traditional marketing decisions and variables. They conclude that such marketing strategy variables have an important impact on the firm's strategic choice and positioning.

The merit of these and other contributions is their recognition that differences between firms do exist and that they may be the deliberate outcome of decisions made by firms. Groupings may therefore be the result of strategic choices. However, many of the current studies (including a large number of those which could be described as being data-driven) raise the question of whether many of the factors which identify groups are in fact purposively manipulated by the organization. Borrowing from a biological perspective and an adaptive strategy viewpoint (Boulding (1956), Pondy and Mitroff (1979) and Chaffee (1983)) it can be argued that group membership is merely an observable manifestation of viable niches in the environment and the organization's ability to adapt to them. Organizations which exhibit certain survival traits which cannot be known completely in advance, remain.

Each of these contributions deployed the group concept in pursuit of the explanation of the level and variation of profits within an industry. Another difficulty apparent is the ad hoc nature of the definition of strategic groups, product lines from Hunt, vertical integration from Newman, relative size from Porter, product strategy from Oster, financial strategy from Ryans and Wittink and Baird and Sudharsan, investment behavior from Primeaux and marketing/business definition strategy from Howell and Frazier. Hatten paid attention to the methodological issues outlining a process by which homogeneity between firms could be tested. The issue of what dimensions to employ was resolved by case study analysis of the firms involved. If strategic groups are to be something more than an ad hoc construction which can conveniently soak up some of the variability in the dependent variables in our analyses of industries then we need a more careful specification of the sources of dissimilarity between firms--a taxonomy incorporating such concepts as mobility barriers (Caves and Porter, 1977) and isolating mechanisms (Rumelt, 1981).

A TAXONOMY INVOLVING MOBILITY BARRIERS AND ISOLATING MECHANISMS

The natural way to assign firms to strategic groups is by reference to the characteristics of their competitive strategies with group members displaying similar strategies and differences between groups being relatively sharp. In Caves and Porter's (1977) words "firms within a group resemble one another closely and recognize their mutual dependence most sensitively." This begs the important question of how to identify the range of strategies available to a firm.

In industrial organization theory, the key characteristics of the structure of an industry are encapsulated in the idea of entry barriers, and market power is said to stem from the presence of structural or behavioral barriers to the entry of new competition. This argument applies also for strategic groups. A firm within a group makes strategic decisions which cannot readily be imitated by firms outside the group without substantial costs, significant elapsed time, or uncertainty about the outcome of those decisions. These barriers to casual imitation by firms outside the group, and the definition of group, requires the existence of such barriers.¹ Mobility barriers and the associated costs of mobility have become the accepted phraseology. Recognizing that these mobility barriers (or group specific entry barriers) afford protection to group members, it is natural to envisage the key strategic variables as those which affect the height of mobility barriers.²

Classification of groups by their mobility barriers (or through notions of idiosyncratic capital and isolating mechanisms) is an appealing idea which stresses the cost advantages enjoyed by group members and emphasizes the elapsed time as well as the investment expenditures required of would-be "entrants" to overcome the barriers. In just the same way as in the traditional exposition of entry barrier theory, mobility barriers represent for the group members an investment in a collective, sometimes intangible, capital asset whose benefits are shared out between group members. *Ex ante*, the investment decision is risky insofar as the costs are irrecoverable. Resale markets may exist for plant and equipment and for upstream supply companies for example,

but differentiation costs are not so easily recovered nor are investments in R&D.

Mobility barriers can be expressed in the same form as conventional entry barriers; "barriers to mobility between groups rest on the same structural features as barriers to entry into any group from the outside," (Caves and Porter (1979)). Thus the group counterpart expresses barriers either as absolute costs of movement from one group to another (becoming vertically integrated for example), or as the operating cost penalty relative to the incumbents that the entrant must face. In either case the present value of the incremental costs associated with changing group membership detracts significantly from the profit margin available before taking into account any competitive reaction.

Sources of Mobility Barriers

Mobility barriers fall into three broad categories as shown in Table 2: market-related strategies, the characteristics of supply in the industry, and features specific to the ownership and management of the individual firm. Market related strategies include the product line, its width and scope; the geographical coverage of the market and the nature of market segments served; the channels of distribution employed and the relationships with buyers; the technologies embodied in the product; and the nature and type of branding and product differentiation in general. These are clearly decision variables for the firm. But more than this they represent strategic choices insofar as a competitive riposte requires an initial investment cost and some elapsed time before competition on equal terms becomes possible. Moreover, the "investment" decision is risky in that it is not certain that

equivalent or better market positioning can be acquired by the follower, or whether the market will respond to imitative strategies in the same way.

Insert Table 2 about here

The characteristics of supply include the scale economies arising from size whether in production or in marketing or in administration; and the range of assets that could be invested in "supply"--manufacturing capability, technological capability, marketing and distribution systems, and R&D expenditure. Scale effects are both conventional and familiar. More interesting, however, are the alternative investments in supply-side assets for the firm. These can be difficult to define with precision (what is an R&D capability?) and thus can be difficult to copy, certainly in the short run. The idea of supply capabilities relates directly to the idea of cross-entry and cross-elasticity of supply. Competition is often observed to spring from firms outside industry boundaries (e.g., Exxon entering the office automation industry) because these entrants possess the inherent capabilities to enter--for them the entry barriers are low--and moreover, they may have considerable latitude in their choice of entry point. The barriers to entry to the industry in general may be lower for some completely new entrants than the mobility barriers which impede the repositioning of incumbent firms.

Whereas supply capabilities may be generally available at a price, mobility barriers arising from the nature of the firm itself rest on characteristics internal to the firm.

The firm's organizational production function can be thought of as its organization structure and the skill of its management in employing it efficiently. Chandler (1962) pointed out the systematic relationship between strategic choices and organization structures, and Caves (1980) recently surveyed the reverse set of relationships which run from the firm's organizational structure to its market behavior. Management skills are intimately related to organization structure. It was Bower (1970) who highlighted the limitations on top management in formulating and implementing strategic choices. "Definition and impetus in turn depend on the 'situational content' of ... lower level decision makers. Context consists of organization structure, meaning not only the organization chart assignment of responsibilities and powers but also the organization's system of measuring and rewarding performance ..." (Caves (1980)). These characteristics of structure, context and skill are not easy to measure, particularly on only superficial acquaintance with the units of analysis. Williamson's (1970) formulation of Chandler's analysis of the two prototype structure structures--the functional and divisional--supplemented by Wrigley (1970) and Rumelt (1974)--provides some guidelines for assessment. As Caves indicates, these contributions highlight the subjective and firm-specific nature of corporate structure, and the organizational mechanisms for maintaining control and direction.

The boundaries of firms can be a rich source of diversity within an industry. The basic characteristics are the nature (related versus unrelated) and extent of diversification, the extent of vertical integration, and the nature of contracts with supplying firms or with customers.

Contracts, whether for technology or for materials and components requirements, can yield significant operating advantages although the time horizon over which these can be enjoyed may not always be very long. Licensee arrangements can confer temporary advantage but when regarded as a form of accelerated learning they can result in a more durable form of technology advantage. Where significant cost savings are available from vertically integrated systems then it is common to observe that the large firms in an industry are all vertically integrated, although the extent varies according to local circumstances (viz., the pulp and paper industry). However, smaller firms search for ways of offsetting the cost advantages of size, for example by providing high quality, high technology products to small insensitive segments of the market. One strategy offsets another by, for example, the raising of one mobility barrier against another strategic group. Diversification may create cost savings, for example the management of brands and families of brands across related markets or the sharing of technologies across similar industrial processes. Of much debate has been the proposition that there are economies of management arising from divisionalized structures and from synergies due to pooling of talents on related problems. Similarly diversification may reduce pockets of excess capacity in management and administration where management is purchased in indivisible lumps. Clearly, the extension or contraction of the firm's boundaries or any change in the nature of its contractual commitments requires time, is uncertain in its outcome, and is difficult to reverse. However, the boundary question is not merely one of unit costs, it is also one of risk. Conventional portfolio theory

argues that the pooling of uncorrelated risks reduces overall risk. In spite of the dissimilar nature of securities markets and the opportunity sets for corporate or business units, it may be possible to see some significant risk reduction (e.g., lower risk of total default) from a diversified portfolio. This can be important in a number of ways. The perceived stakes may be quite different for diversified versus non-diversified companies and the nature of their strategic positioning may reflect this. The time horizon over which firms plan may differ and the initiatives they consider may also vary. In general, the objectives of firms with different boundaries may differ systematically, may be reflected in their competitive behavior, and could result in different kinds of cost structure.

Ownership enables us to distinguish clearly between firms. The obvious characteristics are extent of shareholding both privately held and publicly quoted; nature of shareholders--family influence, country of origin, multi-national, institutional holdings, and corporate interconnection; the nature of relationships with government--shareholding, long term finance, subsidy or other favored treatment. Ownership matters because it affects the desired rate of return and the time horizon over which this is to be earned. Ownership may intrude on the celebrated divide between owners and managers in many more ways than conventional Anglo-American thought suggests. It can affect the definition of the business, in Abell's terminology--publicly owned industries in Europe are severely restricted in the diversification moves that they might consider. Cultural differences supported by different financial systems may result in much more broadly based, loosely held industrial groupings in Japan and West Germany, for example, than in the U.S.A.

To summarize, firm specific sources of mobility barriers are: organization structure and control systems, management skills and capabilities, the nature and extent of diversification versus vertical integration, and the nature of the firm's ownership and its connections with other power groups such as unions, consumer groups and regulators.

Mobility barriers--summarized in Table 2--are a corollary to the existence of strategic groups. A group structuring carries no meaning without costs attached to the imitation of strategy by other firms. Mobility barriers are thus decision variables of firms, and are a way of defining the set of key strategies available to a firm. The essential characteristic is relative cost advantage for incumbent firms and in the limit for a single member group relative cost advantages over all other competitors. The remedy for cost disadvantage of this kind probably involves investment expenditure on tangible or intangible assets with significant elapsed time before the investment comes to fruition. Moreover, the investment expenditures are irreversible to the extent that intangible assets are being acquired and there will typically be considerable uncertainty attached to the outcome of the investment expenditures.

The similarities between mobility barriers and isolating mechanisms should be noted. The notion of isolating mechanisms generalizes the concept of mobility barriers and links it to unique firm characteristics such as the possession of idiosyncratic capital.

Insert Table 3 about here

In essence, Rumelt argues that Table 3 represents a simple theory of strategy which he expresses in the following manner (1981: 19):

A firm's strategy may be explained in terms of the unexpected events which created (or will create) potential rents together with the isolating mechanisms that (will) act to preserve them.

Rumelt's isolating mechanisms therefore provide a basis for identifying groups on the basis of similar clusters of isolating mechanisms on the grounds that they are the phenomena which make competitive positions stable and defensible, given the uncertainty arising from unexpected changes in the task environment and the general environment.

Recently Galbraith and Schendel (1982) also provided an extensive listing of strategy variables by which strategic groups may be defined (see Table 4).

Insert Table 4 about here

The following section provides a brief summary of future research areas.

IMPLICATIONS FOR FUTURE RESEARCH

The existence of strategic groups has a number of implications for industrial organization. In particular they may be of value in examining both the traditional theory of entry and oligopoly theory. The generalization of entry barriers into mobility barriers allows a richer and more realistic portrayal of the process of entry and the motives for diversification (cross-entry) as well as providing a link with firm-level strategy formulation. It also offers an explanation for persistent intra-industry differences in profit rates. The nature

of oligopolistic interdependence is illuminated by the pattern of group memberships and the change of membership over time. In addition, strategic groups have some interesting parallels with theories of the growth of the firm, notably those advanced by Penrose (1959) and Downie (1958).

a. The Structure-Performance Link

The most obvious, although probably the least productive, field of application for the strategic group concept is the traditional market structure-performance link. It is now commonly observed that the structure-performance model is seriously deficient on its own (see, for example, Hay and Morris (1979: 226)), and that more complex causal links need to be taken into account. Strategic groups may well improve this causal modelling process. Further recent strategy research on diversity and firm performance (Rumelt (1982), Christensen and Montgomery (1981) and Bettis and Hall (1982)) should also improve the specification of causal linkages.

b. The Existence of Group Structures

The existing literature appears to justify the existence of group structures by its contribution to explaining differences in profit rates. However, it is appropriate to outline the main hypotheses and questions about the existence of group structures. First, sellers within an industry are likely to differ systematically in traits other than size, so that an industry contains groups of firms with distinctive assets and with different market behavior characteristics. Second, mobility barriers are a counterpart of group structures and are an

extension of conventional ideas about entry barriers. Mobility barriers arise from strategic decisions and stem from three main sources; decisions about strategies in markets, decisions about methods of supply and the firm's asset configuration, and decisions about the boundaries and organization of the firm. Third, isolating mechanisms provide clues about the individual firm's ability to exploit and imitate a strategy commensurate with its underlying skills and resources and protected by mobility barriers. Fourth, how do strategic groups form? Are there systematic relationships between, for example, industry evolution, market growth, and the grouping patterns within an industry? Or, on the other hand, are these patterns the result of initiatives taken by individual firms in response to their own opportunity costs independently of industry-wide trends?

Porter (1979) provides three explanations of the formation of strategic groups: (i) investments in building mobility barriers are risky and firms have different risk-aversion postures; this leads to different groups defined in terms of R&D and advertising outlays as defensive mobility barriers; (ii) business units which differ in their relation to a parent company may differ in goals in ways that lead to strategy differences; (iii) historical development of an industry (nature of demand, production technology, product characteristics, etc.) bestows differential advantages/disadvantages on firms. A fourth possible explanation, relegated by Porter (1979: 217) to a footnote, is exogenous causes such as technological change:

"Changes in the structure of the industry can either facilitate group formation, or work to homogenise

groups. For example, technological changes or changes in buyer behavior can shift industry boundaries bringing entirely new strategic groups into play in the industry by increasing or decreasing product substitutability and hence shifting relevant industry boundaries."

Porter merely hints at the effect of technical change on group formation. An equally important empirical question is whether technological change impacts differently on different strategic groups; viz., does technological change affect the mobility barriers surrounding one group to a lesser or greater extent than the barriers (same or different barriers) surrounding another group? If so, does this differential impact explain performance? This question has not so far been addressed empirically although *a priori* it would be hypothesized that investments in R&D and engineering constitute significant mobility barriers in particular industries.

c. Entry Theory and Mobility of Firms

There are some hypotheses about the process of entry which merit attention. First, the group specific character of mobility barriers has strong implications for the entry of firms from outside the industry. In particular, the presence of groups raises the possibility of entry paths involving a sequence of moves before a settled position within the industry is achieved. Where capital requirements are large, firms will seek to minimize risk by indirect or circuitous moves which place only limited amounts of capital at risk at each stage. In general, entry will be aimed at a particular group or at the creation of a new group. Second, the queue of potential entrants to a group will generally consist of established firms in other industries, going

firms in other groups, and entirely new firms. The position in the queue will depend on the structural mobility barriers as modified and extended by the incumbent firms' choice of barrier raising investments. Third, going firms outside the industry will be the major potential competitors for the oligopolistic core of dominant firms protected by product differentiation and absolute cost barriers. Correspondingly, new firms--the traditional entrant of Bainsian theory--will appear in the competitive fringe of oligopolistic markets. Fourth, incumbent firms deter entry by investing in the creation of new mobility barriers.

The traditional theory of entry has a number of serious limitations. These difficulties arise from an over-narrow definition of "entry." Thus, Bain concentrates on entry by new firms. He neglects take-overs, cross-entry, vertical integration, and additions to capacity by existing firms. The group concept allows a richer portrayal of the entry process from which it is possible to observe types of entrant, patterns and paths of entry, the effect of entry on the evolution of the industry, entry deterrence behavior and the manner in which cross-entry spurs the parallel development of separate industries.

d. Patterns of Rivalry

In traditional oligopoly theory goal congruence among firms is assumed even when the problems and costs of communication and the detection of cheating are discussed, Stigler (1964). By contrast, the strategic groups thesis argues that not only may there be very little goal congruence to start with, but that other differences (e.g., customers, suppliers, distribution channels) which contribute to strategic

grouping within the same industry make the formation of oligopolistic consensus even more difficult. As asymmetry increases, in other words as the number of observable strategic groups increases, collusion becomes all the more improbable. The industry becomes segmented but does not disappear because cross-elasticities of substitution between products remain unchanged. Oligopolistic interdependence and homogeneity of firms become recognizable not at the industry level but at the strategic group level.

Understanding of the patterns of rivalry between groups is not greatly advanced by the weak assertion that it all depends on market interdependence. Where groups are defined by market related characteristics like product line or distribution channels, then market interdependence is likely to be lower rather than higher. Where group configurations arise from non-market sources then the potential for market overlap will be that much greater.

In general, however, oligopoly theory has lacked a "realistic" testable framework within which patterns of rivalry can be observed over time. The various theories have been unique constructs and the multitude of case studies have lacked generality. Strategic group analysis conducted longitudinally may provide us with a framework to allow the categorization of strategic changes, an objective analysis of the position of a firm within an industry and a way of assessing industry evolution. The prospect, however, merely tantalizes. Group analysis requires further taxonomy development before group structures can be compared intertemporally. Strategic groups like game theory may

remain an elegant and inspired form of language, but we should be aware of the empty boxes within the matrices.

The principal hypotheses that merit attention are: group members are likely to respond in similar ways to disturbances from outside the group; the effect of groups on rivalry may depend upon the number and size distribution of groups and on the market interdependence between groups; and firms within a given group can recognize mutual dependence and coordinate their behavior more effectively than can firms in different groups.

e. The Theory of Growth of the Firm

Strategic group analysis has interesting parallels with the theory of growth of the firm as first articulated by Downie, Penrose, and Marris more than twenty years ago. Downie sought to explain the sources of efficiency dispersion within an industry, the consequences for competition, and the role of innovation in the competitive process. His contribution was to link growth of the firm and profitability, and to put growth firmly in the context of the competitive process in which he had a clear place for oligopolistic interdependence. Downie's view of the innovation mechanism has been criticized for its apparent unreality in ascribing innovation to the less efficient firms, but it requires only to add mobility barriers and patterns of cross entry to recover his basic results.

"Distinctive competence" is a phrase much used by policy analysts. It is usually taken to refer to those unique and distinctive features of an organization which can be translated into a competitive advantage

in the market. The thrust of the Penrose argument is that certain organizational and managerial characteristics facilitate successful corporate strategy initiatives and the subsequent development of corporate structures.

From this background it is possible to pose various hypotheses: strategic groups may stimulate the examination of the interrelation between business units, their corporate parents and their corporate siblings in analyzing the evolution of industries; strategic groups provide a means for analyzing changes in industry structure over time and can provide predictions of the mechanisms by which structural change will take place; changes in strategic groupings and in mobility barriers can eventually be brought about by rates of profit which differ systematically between groups.

CONCLUSIONS

The theory of strategic groups and associated mobility barriers is related to the structure of industries and the strategic behavior of firms within their industries. The group concept appears to be a supply side concept insofar as it defines structures within industries, but is in all its essentials a market behavior or conduct concept fitting neatly between the supply idea of an industry and the demand idea of a market. The defining characteristics of strategic groups arise from the nature of the mobility barriers and isolating mechanisms which protect the groups. The three sources of mobility barriers are market-related strategies, general supply characteristics of the industry, and the organizational and boundary choices of the firm--each of them being decision variables for the firm.

Strategic groups pose a number of interesting research challenges. The first to be explored and the most obvious one is the contribution it makes to the market structure-performance link. Of more promise are other areas; the existence and evolution of group structures and their relationship to the evolution of industries, their contribution to the theory of entry, the queue of potential entrants and the alternative entry paths, the patterns of rivalry in oligopolistic markets, and our understanding of the growth and evolutionary patterns of firms.

The emergence of the strategic group concept and the increasing research attention being paid to the boundary areas between industrial organization, strategic marketing, administrative behavior and strategic management suggests closer attention to the firm as the unit of analysis. The difficulty of applying rigorous research techniques in the area of strategic decision-making is extreme. The problems of controlling for exogenous variables, the lack of comparability among the units of analysis and the disparate nature of these units, and the changing nature of opportunity sets and the environment generally restricts the ability of researchers to make causal connections between sets of variables. All these problems are compounded by the lack of suitable data bases for research.³ There may well be a continuing trend towards in depth studies of firms and their industry settings in an attempt to apply control procedures to fewer variables and to explore the character and texture of strategic choices in ways impossible for statistical analysis to achieve. The effect of strategic groups is to restore strategic decisions to the center of the structure and performance arena and to re-emphasize the firm as an important unit of analysis.

FOOTNOTES

¹ See also the notion of "uncertain inimitability" advanced by Lippmann and Rumelt (1981).

² Rumelt (1981) goes further in explaining the uniqueness of firms by generalizing from mobility barriers to "isolating mechanisms" and the notion of "idiosyncratic capital."

³ Honorable exceptions to this are the PIMS Program of the Strategic Planning Institute, and the Program for Industry and Company Analysis (PICA) at Harvard.

REFERENCES

- Abell, D. E. Defining the Business Englewood Cliffs, N.J.: Prentice-Hall, 1980.
- Ackoff, R. L. A Concept of Corporate Planning New York: John Wiley and Sons, 1970.
- Aldrich, H. Organizations and Environments Englewood Cliffs, N.J.: Prentice-hall, 1979.
- Andrews, P. W. S. "Industrial Analysis in Economics," in Andrews & Wilson (eds.), Oxford Studies in the Price Mechanism, 1951.
- Bain, J. S. Barriers to New Competition Cambridge: Harvard University Press, 1956.
- Bain, J. S. Industrial Organization, Second Edition, New York: Wiley, 1968.
- Baird, I. S. and D. Sudharsan. "Strategic Groups: A Three Mode Factor Analysis of Some Measures of Financial Risk," Working Paper, 931, Bureau of Economic and Business Research, University of Illinois at Urbana-Champaign, 1983.
- Bettis, R. A. and W. K. Hall. "Diversification Strategy, Accounting Determined Risk and Accounting Determined Return," Academy of Management Journal, 1982, 25, 2, 254-264.
- Boulding, K. E. "General Systems Theory--The Skeleton of Science," Management Science, 2, April 1956, 197-208.
- Brock, C. The Control of Restrictive Practices from 1956, London, McGraw-Hill, 1966.
- Caves, R. E. "Industrial Organization, Corporate Strategy, and Structure: A Survey," Journal of Economic Literature, 1980, 18(1), 64-92.
- Caves, R. E. & M. E. Porter. "From Entry Barriers to Mobility Barriers: Conjectural Decisions and Contrived Deterrence to New Competition," Quarterly Journal of Economics, 1977, 91, 241-262.
- Caves, R. E. & M. E. Porter. "Market Structure, Oligopoly and Stability of Market Shares," Journal of Industrial Economics, June 1978, Vol. XXVI, No. 4.
- Caves, R. E. and Pugel, Thomas. Intra-Industry Differences in Conduct and Performance: Viable Strategies in U.S. Manufacturing Industries New York University Monograph, 1980.

- Chamberlin, E. "Monopolistic Competition Revisited," Economica, 1951.
- Chaffee, E. E. "Three Models in the Strategy Construct," Working Paper, NCHEMS, Colorado, September 1983.
- Chandler, A. D. Jr. Strategy and Structure: Chapters in the History of the Industrial Enterprise Cambridge: MIT Press, 1962.
- Christensen, H. K. and C. A. Montgomery. "Corporate Economic Performance: Diversification Strategy Versus Market Structure," Strategic Management Journal, 2, 1981, 327-343.
- Dill, W. R. "Environment as Influence on Managerial Autonomy," Administrative Science Quarterly, 1958, 2, 409-443.
- Downie, J. The Competitive Process London: Duckworth, 1958.
- Galbraith, C. and D. E. Schendel. "An Empirical Analyses of Strategy Types," Strategic Management Journal, 4, 2, 1983, 153-173.
- Ghazanfar, A. "Analysis of Competition in the Office Reprographics Industry in the U.K.," Ph.D. thesis, London Business School (forthcoming).
- Hatten, K. J. "Strategic Models in the Brewing Industry," Unpublished doctoral dissertation, Harvard University, 1974.
- Hatten, K. J. & D. E. Schendel. "Heterogeneity within an Industry," Journal of Industrial Economics, December 1977, Vol. XXVI, No. 2, 97-113.
- Hatten, K. J. & D. E. Schendel & A. C. Cooper. "A Strategic Model of the U.S. Brewing Industry: 1952-1971," Academy of Management Journal, 1978, Vol. 21, No. 4, 592-610.
- Hay, D. A. & D. J. Morris. Industrial Economics: Theory and Evidence Oxford University Press, 1979.
- Howell, R. D. and G. L. Frazier. "Business Definition and Performance," Journal of Marketing, 47, Spring 1983, 59-67.
- Hunt, M. S. "Competition in the Major Home Appliance Industry 1960-1970," Unpublished doctoral dissertation, Harvard University, 1972.
- Lippmann, S. A. & R. P. Rumelt. Efficiency Differentials under Competition: A Stochastic Approach to Industrial Organization U.C.L.A., 1981.
- Marris, R. The Economic Theory of Managerial Capitalism, Macmillan, 1964.

Newman, H. H. "Strategic Groups and the Structure/Performance Relationship: A Study With Respect to the Chemical Process Industries," Unpublished doctoral dissertation, Harvard University, 1973.

Newman, H. H. "Strategic Groups and the Structure/Performance Relationship," Review of Economics & Statistics, 1978, Vol. 60, 417-427.

Oster, Sharon. "Intraindustry Structure and the Ease of Strategic Change," Review of Economics and Statistics, Vol. LXIV, August 1982, 3, 376-384.

Penrose, E. T. The Theory of the Growth of the Firm Oxford: Basil Blackwell, 1959.

Pondy, L. R. and I. I. Mitroff. "Beyond Open Systems Models of Organizations," in B. M. Staw (ed.), Research in Organizational Behavior Greenwich, Conn.: JAI Press, 1979, 3-39.

Porter, M. E. "Consumer Behaviour, Retailer Power, and Manufacturer Strategy in Consumer Goods Industries," Unpublished doctoral dissertation, Harvard University, 1973.

Porter, M. E. "The Structure Within Industries and Companies' Performance," Review of Economics and Statistics, May 1979, No. 61, 214-227(b).

Porter, M. E. Competitive Strategy New York: Free Press, 1980.

Primeaux, Walter, J. Jr. "A Method for Determining Strategic Groups and Life Cycle Stages of an Industry," in D. M. Gardner and H. Thomas (eds.), Strategic Marketing and Management John Wiley (forthcoming).

Robinson, J. "The Industry and the Market," Economic Journal, 1956.

Rumelt, R. P. Strategy, Structure and Economic Performance, Division of Research, Harvard University Graduate School of Business Administration, 1974.

Rumelt, R. P. "Towards a Strategic Theory of the Firm," paper prepared for a conference on Non-Traditional Approaches to Policy Research, Graduate School of Business, University of Southern California, 1981.

Rumelt, R. P. "Diversification, Strategy and Profitability," Strategic Management Journal, 3, 4, October/December 1982, 359-369.

Ryans, A. B. and Wittink, D. R. "Security Returns as a Basis for Estimating the Competitive Structure in an Industry," in D. M. Gardner and H. Thomas (eds.), Strategic Marketing and Management John Wiley (forthcoming).

Schumpeter, J. A. The Theory of Economic Development Harvard University Press, 1934.

Shaw, R. W. & C. J. Sutton. Industry and Competition, Macmillan, 1976.

Stigler, G. J. "A Theory of Oligopoly," Journal of Political Economy, 1964, 72.

Williamson, O. E. Corporate Control and Business Behaviour, Englewood Cliffs, N.J.: Prentice-Hall, 1970.

Wrigley, L. "Divisional Autonomy and Diversification," Unpublished D.B.A. thesis, Harvard Business School, 1970.

TABLE 1
STRATEGIC GROUPS: PREVIOUS STUDIES

| <u>Study</u> | <u>Industry</u> | <u>Basis for Strategic Group Formation</u> |
|---|---|--|
| Hunt (1972) | "White Goods" | <u>Product Line Basis</u> - degree of product diversification - differences in product differentiation - extent of vertical integration |
| Newman (1973, 1978) | 34 4 digit "Producer Goods" Industries: Chemical Processes | <u>Degree of Vertical Integration</u> |
| Porter (1973) | 38 3 digit "Consumer Goods" Industries | <u>Relative Size of Firm</u> - Leader/Follower Classification |
| Hatten (1974) Hatten and Schendel (1977) | Brewing Industry | <u>Manufacturing Variables</u> - Number, Age, Capital Intensity of Plants <u>Marketing Variables</u> - Number of brands, price, and receivables/sales <u>Structural Variables</u> - 8-firm concentration ratio - firm size |
| Hatten, Schendel and Cooper (1978) | Brewing Industry | <u>Manufacturing, Marketing and Financial Variables</u> (Leverage, Merger/Acquisition Behavior) |
| Caves and Pugel (1980) | U.S. Manufacturing Industry--Sample | <u>Relative Size of Firm</u> |
| Oster (1982) | 19 Consumer Goods Industries from Compustat | <u>Product Strategy</u> - Advertising/Sales Ratio |
| Ryans and Wittink (1982) | Airline Industry | <u>Financial Strategy</u> Clustering of Residuals from Capital Asset Pricing Model (Security Returns) |
| Baird and Sudharsan (1983) | Office Equipment/ Electronic Computing | <u>Financial Strategy Variables</u> - Leverage, Current Ratio, Return on Assets, Dividend Payment Ratio, Times Interest Earned, Size |
| Primeaux (1983) | Textiles Petroleum | Size Investment Behavior |
| Howell and Frazier (1983) | Medical Supply and Equipment | Customer Groups Served Customer Needs Served (due to Abell (1980)) |

TABLE 2
SOURCES OF MOBILITY BARRIERS

| Market Related Strategies | Industry Supply Characteristics | Characteristics of Firms |
|---------------------------|----------------------------------|---|
| Product Line | Economies of scale: | Ownership |
| User-technologies | production | Organization Structure |
| Market-segmentation | marketing | Control Systems |
| Distribution channels | administration | Management Skills |
| Brand names | Manufacturing processes | Boundaries of |
| Geographic coverage | R&D Capability | - firms |
| Selling Systems | Marketing & Distribution Systems | - diversification - vertical integration |
| | | Firm Size |
| | | Relationships with influence groups |

TABLE 3
RUMELT'S ISOLATING MECHANISMS

| Elements of Strategic Position | |
|------------------------------------|--------------------------------|
| <u>Sources of Potential Rents</u> | <u>Isolating Mechanisms</u> |
| (Unexpected Events) | |
| Changes in Technology | Causal Ambiguity |
| Changes in Relative Prices | Sunk Costs and Limited Markets |
| Changes in Consumer Tastes | Switching and Search Costs |
| Changes in Law, Tax and Regulation | Consumer and Producer Learning |
| Discoveries and Inventions | Ideosyncratic Investment |
| | Team Embodied Skills |
| | Unique Resources |
| | Special Information |
| | Patents and Trademarks |
| | Reputation and Image |

Adapted from Rumelt (1981)

TABLE 4

POSSIBLE STRATEGY VARIABLES FOR DEFINING STRATEGIC GROUPS

Controllable variables: Strategy posture/Strategy change variables

Marketing: Price, Advertising and Selling Expenses,
Breadth of product-line, Competitive
Positioning, Product R&D

Production: Forward/backward integration; Capacity
Utilization; Cost Structure; Process R&D

Investment: Capital Investment and its Rate of Change

Uncontrollable Variables

Environmental level

- Technology
- Macro-economy
- Legal and regulatory structures

Adapted from Schendel and Galbraith (1982); Ackoff (1970); Dill (1958);
Aldrich (1979)

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